

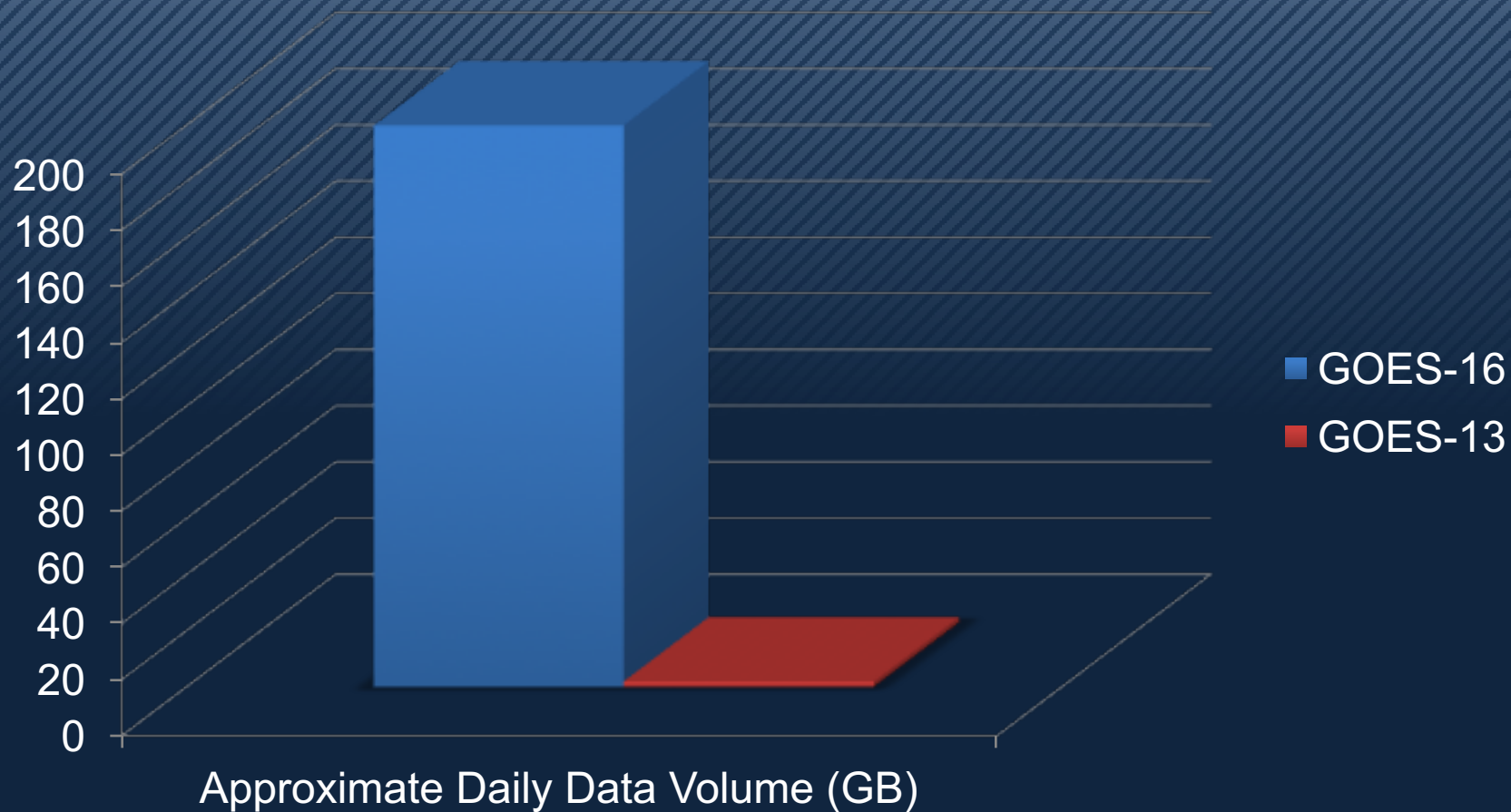


# GOES-R USER TESTIMONIALS: RESEARCH PERSPECTIVE

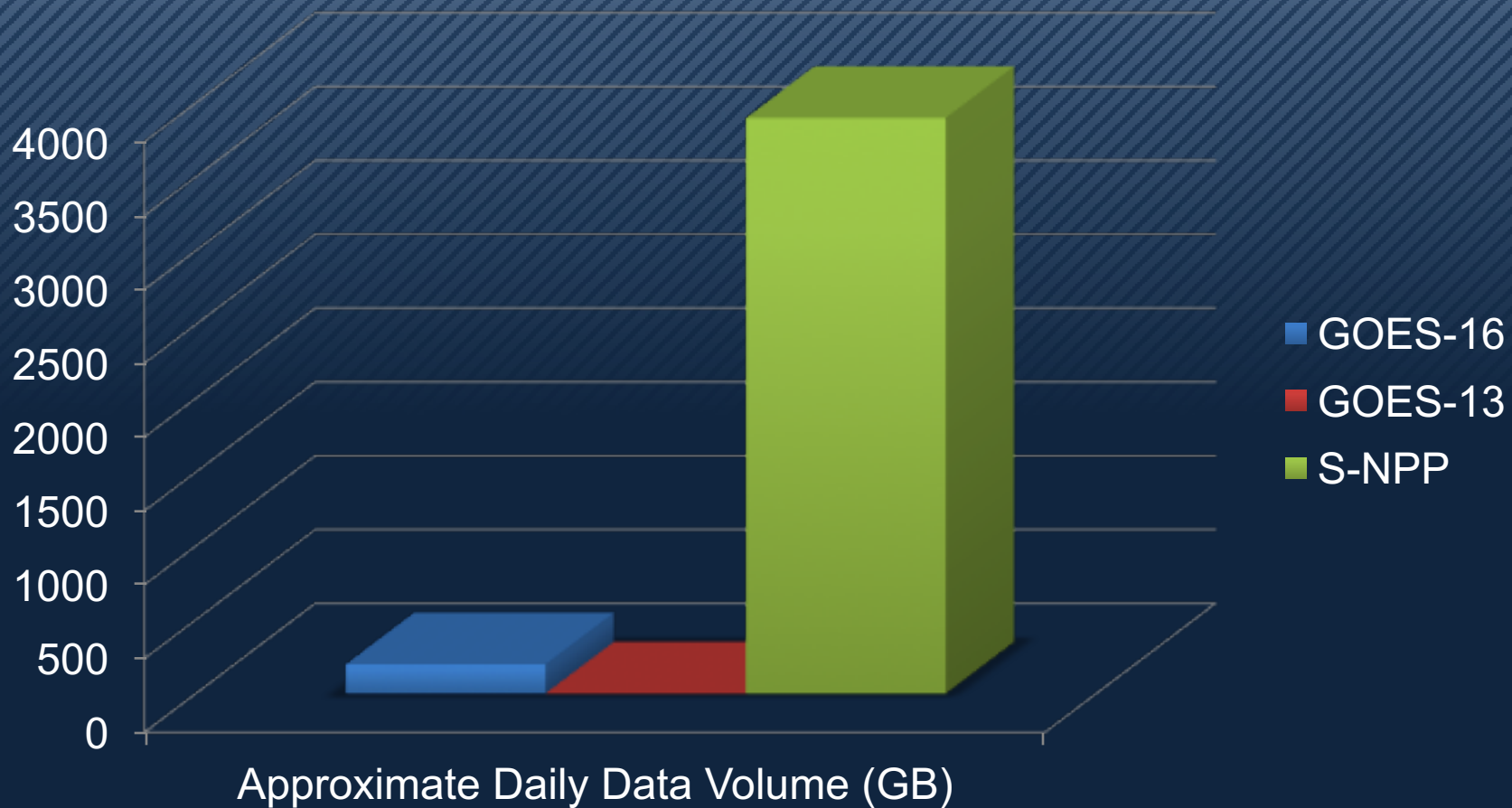


**Michael J. Pavolonis**  
**NOAA/NESDIS/STAR**

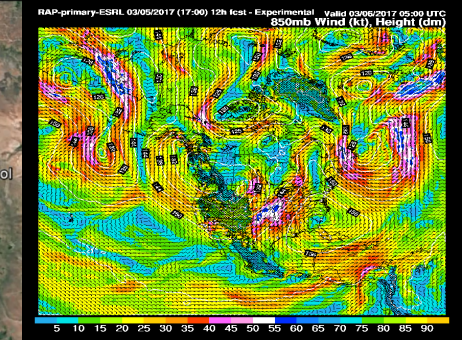
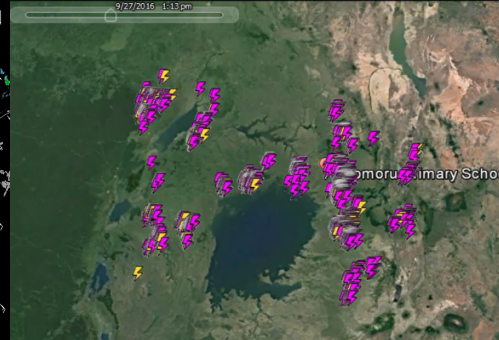
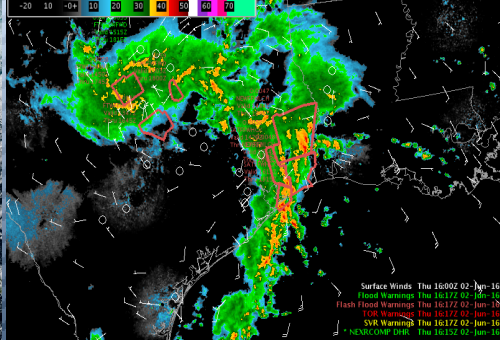
# “Big Data”



# “Big Data”





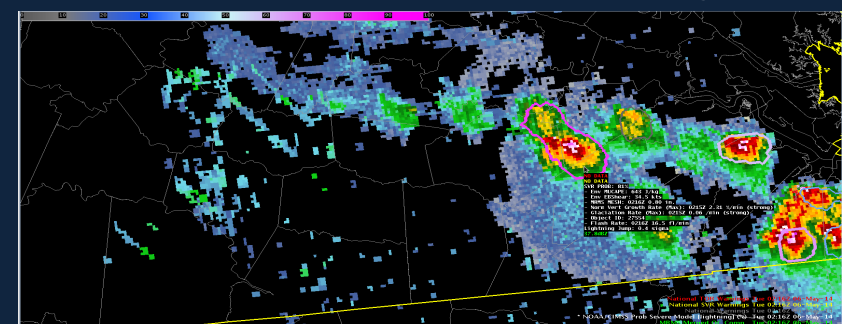
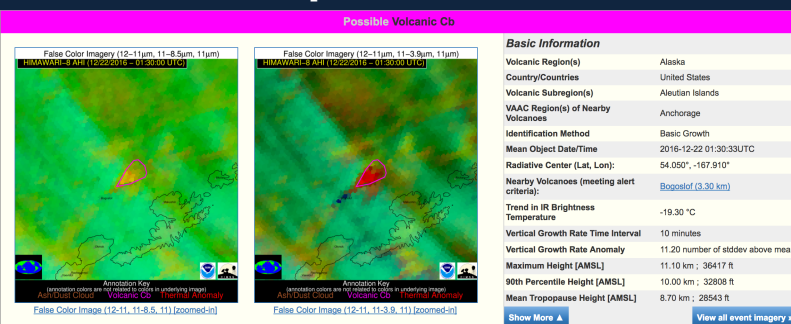


Operational applications require “Big Data” to be automatically transformed into information and insight for decision making

Volcanic Eruption Detected!



Severe Weather Likely



# The VOLcanic Cloud Analysis Toolkit (VOLCAT)

Automated early detection of volcanic eruptions



FVXX21 KNES 071809  
VA ADVISORY  
DTG: 20170707/1809Z

VAAC: WASHINGTON

VOLCANO: POPOCATEPETL 341090  
PSN: N1901 W09837

AREA: MEXICO

SUMMIT ELEV: 17802 FT (5426 M)

ADVISORY NR: 2017/056

INFO SOURCE: NOAA CIMSS ALERT/CENAPRED

## Volcanic Cloud Alert Report

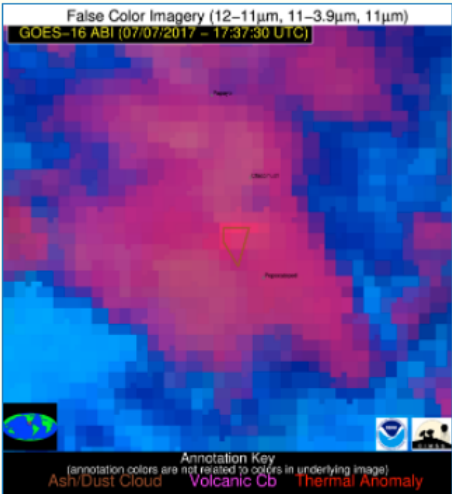
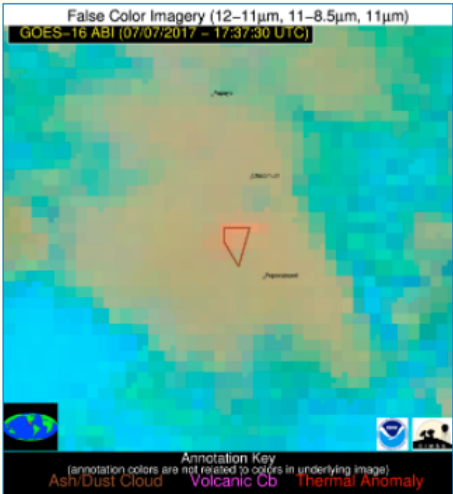
ERUPTION DETAILS: NEW VA EM AT 07/1719Z

RMK: WE HAVE RECEIVED INFORMATION SUGGESTING A POSSIBLE VA EMISSION. WE WILL GATHER FURTHER INFORMATION AND ISSUE A FULL ADVISORY AS SOON AS POSSIBLE.

NXT ADVISORY: AS SOON AS POSSIBLE

Date:	2017-07-07
Time:	17:37:30
Production Date and Time:	2017-07-07 17:44:35 UTC
Primary Instrument:	GOES-16 ABI
More details ▼	

## Possible Volcanic Ash Cloud



## Basic Information

Volcanic Region(s)	Mexico and Central America
Country/Countries	Mexico
Volcanic Subregion(s)	Mexico
VAAC Region(s) of Nearby Volcanoes	Washington
Identification Method	Puff
Mean Object Date/Time	2017-07-07 17:37:30UTC
Radiative Center (Lat, Lon):	19.100°, -98.680°
Nearby Volcanoes (meeting alert criteria):	<a href="#">Popocatepetl (2.80 km)</a>
Maximum Height [AMSL]	9.20 km ; 30184 ft
90th Percentile Height [AMSL]	9.10 km ; 29856 ft
Mean Tropopause Height [AMSL]	16.50 km ; 54134 ft

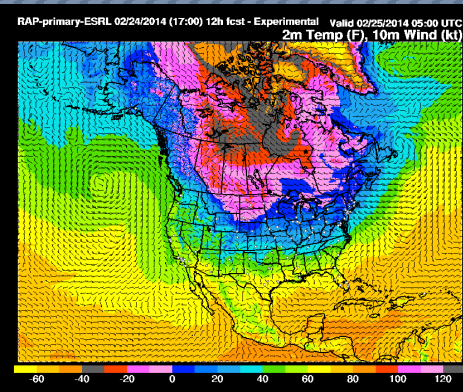
Show More ▲

View all event imagery »

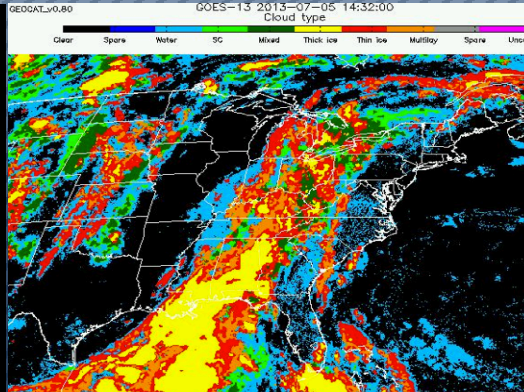


# ProbSevere: "Big Data" to Information

GB of data → KB of information



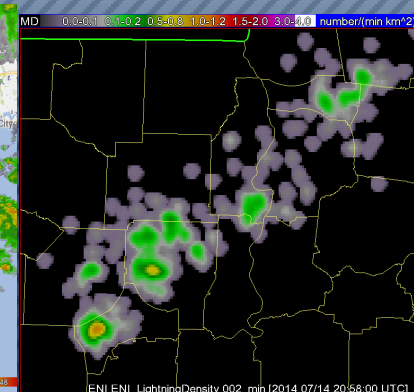
High-resolution  
NWP Data



ABI Derived Cloud  
Trends



Radar Imagery and  
Derived Products



Total Lightning

*Probability a thunderstorm  
will produce severe weather  
(wind, hail, tornado) up to  
60 minutes in the future*

